Remarks

The Office action rejects claims 1, 3 – 6, and 9 – 13 under 35 U.S.C. 102(b) as being anticipated by Divisek et al. (US 6,277,261 B1). According to Divisek, a dissolved metal salt is sandwiched between an electrolyte and an electrode and the metal is electrochemically removed from the dissolved metal salt (See column 2, lines 9 – 22). Divisek explains in order to generate the electric current required for the deposition, a second electrode layer may be provided as an additional current conductor. The electrolyte layer is then disposed between two electrodes (See column 2, lines 44 – 47). The catalytically active metal is deposited directly at the three-phase zone (See column 2, lines 56 – 56). Divisek explains, if electrodes together with the intermediate layer (of dissolved metal) are disposed at both sides of the electrolyte layer, this electrode-electrolyte compound structure can be used directly in a fuel cell (See column 2, lines 62 – 65).

Reconsideration is respectfully requested, because according to the present invention, a metal is deposited out of an ion-conductor, i.e., the membrane, itself. This feature of the present invention provides an advantage over Divisek, because no opposite-ion, such as an anion is present in the ion-conductor or bound to the ion-conductor, respectively. The present invention avoids contamination with other ions as occurs according to Divisek. Foreign ions, as deposited according to Divisek, must be removed, typically by a washing process or the like. Additionally, this washing process occurs with chloride or perchlorate. Therefore, the washing tends to create further costs and operating steps. Furthermore, a distribution of the anions being dissolved from the membrane allows a rather homogeneous distribution and is being decelerated, at least to a certain extent, by diffusion. The homogeneous distribution of the anions causes the particles of the catalytic metal to be distributed very homogeneously and within a nm-range.

The Office action acknowledges that claims 7 and 8 are not anticipated by Divisek. However, the Office action rejects claims 7 and 8 under 35 U.S.C. 103(a) as being obvious in view of Divisek. The Office action acknowledges Divisek does not specifically disclose wherein the catalytic component is deposited on the cathode-side

electron conductor or on the anode-side electron conductor. The Office action argues it would have been obvious that the catalytic component would be present on either the cathode-side conductor or on the anode-side conductor, after the electrochemical deposition occurs under fuel cell conditions, since the catalyst will pass through the electrolyte material onto the opposite side from which the catalyst is originally provided.

Reconsideration is respectfully requested. As discussed above, according to the present invention, the deposition of the metal is performed out of the ion-conductor, i.e., the membrane. Therefore, in contrast to Divisek, no foreign ions are contaminated and additional process step involving washing with chloride or perchlorate is avoided. Furthermore, the deposition of anions, according to the present invention, is homogeneous and results in a very homogeneous particle distribution of catalytic material within the nm-range.

For at least these reasons, the present rejections should be reconsidered and withdrawn.

Fee Authorization

The Director is hereby authorized to charge any deficiency in fees filed, asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account 14-1437. Please credit any excess fees to such account.

Conclusion

The present application is in condition for allowance, and applicants respectfully request favorable action. In order to facilitate the resolution of any questions, the Examiner is welcome to contact the undersigned by phone.

NOVAK DRUCE + QUIGG, LLP
1300 Eye St. N.W.
Suite 1000 West
Washington, D.C. 20005

Phone: (202) 659-0100
Fax: (202) 659-0105

Respectfully submitted,
NOVAK DRUCE + QUIGG, LLP

Michael P. Byrne
Registration No. 54,015